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Measuring Milk: A call for change in quantifying breastfeeding behaviour

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Breastfeeding rates in the UK are among the lowest in the world. Around 80% of mothers attempt to breastfeed at least once, however by 6-8 weeks postpartum only 30% are exclusively breastfeeding, declining to less than 1% at 6-months (McAndrew et al., 2012; Public Health England, 2017). Evidence for the health benefits of breastfeeding is well substantiated yet the empirical measurement of infant feeding remains highly problematic and needs urgent modification.

Current measurement

As recommended by the WHO (2003), NHS England (2014) capture breastfeeding 'initiation' as women having put their baby to the breast (or fed them expressed breastmilk) within the first 48 hours of birth. However, as the last UK Infant Feeding Survey data (McAndrew et al., 2012) pointed out, initial breastfeeding prevalence rates reflect "babies put to the breast at all, even if this was one occasion only". The extent to which this accurately reflects the practice of 'starting' breastfeeding is highly questionable, especially considering the physiological processes of lactation. These criteria provide very little information about early feeding patterns as 'putting baby to the breast' can be practiced alongside any feeding style, and breastfeeding uptake rates measured in this way could easily be overinflated. In describing breastfeeding duration and exclusivity, the majority of health research internationally has categorised (typically dichotomously) breastfeeding behaviour, comparing exclusive breastfeeding to exclusive formula feeding (i.e. no breastfeeding) (Ip et al., 2007). Investigating infant feeding in this way has been important in identifying risks associated with exclusive formula feeding, and has formed the foundations of numerous public health recommendations (Kramer & Kakuma, 2002). However, the exclusivity dichotomy has since diluted the wide variability in infant feeding practices and greatly restricted the generalisability of conclusions that can be drawn from such research. Although exclusive

formula feeding is a recognised risk of increased infant morbidity and mortality (Ip et al., 2007), investigations have failed to routinely compare this with quantifiably lower levels of breastfeeding exclusivity, and claims of risk are therefore only valid in relation to exclusive breastfeeding. The current literature provides insufficient evidence for the health risks associated with mixed or supplementary formula feeding.

‘Any’ Breastfeeding

As a variable, ‘any breastfeeding’ categorically defines the practice of ‘mixed-feeding’. It is used as an intermediate variable between the binary, exclusive, extremes of breastfeeding and formula feeding to assess the health benefits of breastfeeding and efficacy of breastfeeding promotion interventions. However, it is a variable with limited value. By definition ‘any’ breastfeeding includes ‘any’ formula feeding to ‘any’ extent, assuming women who predominantly breastfeed perform the same behaviour as women who mainly formula feed. In some cases, exclusive and non-exclusive breastfeeding are summed together as ‘any’, which fails to distinguish any kind of behaviour gradient and mirrors the ‘ever vs never breastfed’ approach. For one of many examples of its use (Ip et al., 2007; Haroon et al., 2013), one recent study (Relton et al., 2018) reported financial incentives improved breastfeeding rates at 6-8 weeks postpartum, despite only identifying a statistically significant increase in ‘any’ (exclusive or non-exclusive) breastfeeding. The extent to which women were formula feeding or breastfeeding is still unknown. For risk and intervention studies like this, the ‘any’ category provides no meaningful way of interpreting the direction of effects observed, meaning adverse intervention effects may occur but remain undetected. Granted, more women in the intervention group may perform ‘any’ breastfeeding, but there is no indication that ‘any’ is more or less than before in terms of absolute proportion. Is it an improvement to have more women breastfeeding 20% of the time than fewer women breastfeeding 80% of the time?

Implications for practice

Women want what is best for their infants. For many this will mean exclusively breastfeeding their infants because, of course, “*breast is best*”. Women frequently make prolonged attempts at exclusive breastfeeding even when it leads to physical or psychological pain, refusing to use formula out of fear and guilt that supplementing is associated with health risks (Lee & Furedi, 2005). Given that the overwhelming majority of women in the UK will mix-feed their infants at some point in the first 6-months (McAndrew et al., 2010), women need to know what level of breastfeeding in a mixed feeding regime provides the same health benefits as exclusive breastfeeding. Unfortunately, the extensive oversimplification of measuring breastfeeding behaviour makes it virtually impossible to estimate what degree of formula feeding is associated with an increased risk of infant morbidity and mortality. With no evidence or discussion about a threshold of healthy formula supplementation, women begin to question the credibility of public health advice for exclusive breastfeeding.

Moving Forward

Considering evidence for the health benefits of prolonged exclusive breastfeeding, efforts to implement infant feeding guidelines promoting exclusive breastfeeding to 4–6 months should remain supported. However, a more accurate measurement of infant feeding is required to start effectively understanding, monitoring and promoting breastfeeding behaviour.

Breastfeeding is a complex health behaviour and requires definition by three constructs: initiation, duration (irrespective of method or other food sources), and exclusivity. To more accurately measure breastfeeding behaviour in a quantifiable manner an 11-point scale of proportionate infant feeding, as exemplified in Figure 1. below could be recommended for future investigations. Women are invited to rate what overall proportion (%) of their infants’ feeds over a given time period (previous 48-hours is suggested) have been breastmilk and/or formula milk.

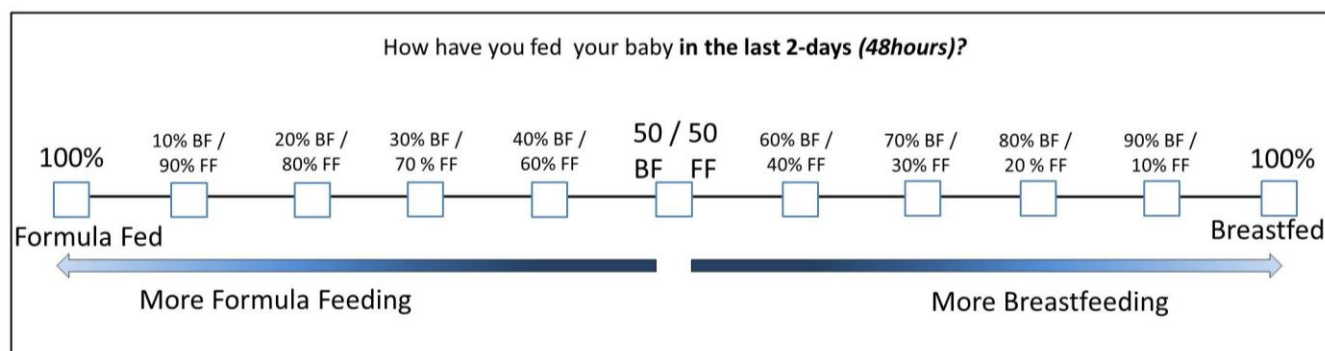


Figure 1. Proposed 11-point scale of proportionate infant feeding (breastfeeding vs formula feeding) recommended for standard use in future infant feeding investigations.

Assessing breastfeeding behaviour on a proportionate continuum could enable future researchers to observe changes in infant feeding patterns over time, investigate the degree to which interventions increase 'any' breastfeeding (if at all), and empirically demonstrate what level of mixed-feeding is associated with comparable health benefits to exclusive breastfeeding should such a level exist. The scale also holds potential to define a threshold for 'successful' initiation of breastfeeding and capture more accurate data on breastfeeding uptake rates. To date, breastfeeding behaviour has been conceptualised as an 'all-or-nothing' health behaviour and drastically oversimplified as an operationalised variable as a result. Such dichotomous and categorical measurements of infant feeding are no longer fit for purpose in current investigations. Given current breastfeeding rates across the UK and the importance to public health globally, being able to monitor small yet effective improvements in infant feeding practices is crucial in paving efficient health promotion pathways.

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